Welcome to the Webinar!

Word Generation: Helping English Language Learners Strengthen Academic Vocabulary in the Core Content Areas

We will be starting soon.

Word Generation: Helping English Language Learners Strengthen Academic Vocabulary in the Core Content Areas

June 14, 2012

About the Resource Center

The **U.S. Department of Education** is committed to promoting effective practices, providing technical assistance, and disseminating the resources critical to ensuring the success of charter schools across the country. To that end, the Education Department, under a contract with American Institutes for Research, has developed the **National Charter School Resource Center**.

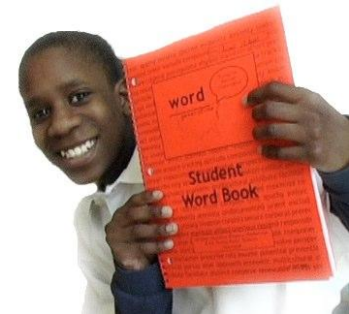# Presenter

Claire White, Ph.D.
Director, Word Generation Program,
Strategic Education Research Partnership
Adjunct Lecturer
Teacher Education Program
Harvard Graduate School of Education

Word Generation:
Helping English Language Learners Strengthen Academic Vocabulary in the Core Content Areas

Claire E. White
National Charter School Resource Center
Strategic Education Research Partnership/SERP
June 14, 2012

The Strategic Education Research Partnership (SERP)

- Organization that brings together researchers and practitioners to solve problems together in real time

- Work regularly with superintendents, academic superintendents, directors of literacy, administrators, etc.

- Most importantly, we work with **practitioners** who contribute to the development of tools, resources and materials that are field tested in the schools

Purpose of this presentation

- To discuss how gaps in vocabulary in middle school students, particularly English language learners and low-income students, interfere with comprehension of content area texts

- To introduce the *Word Generation* curriculum – a program designed to teach academic vocabulary across the core content areas
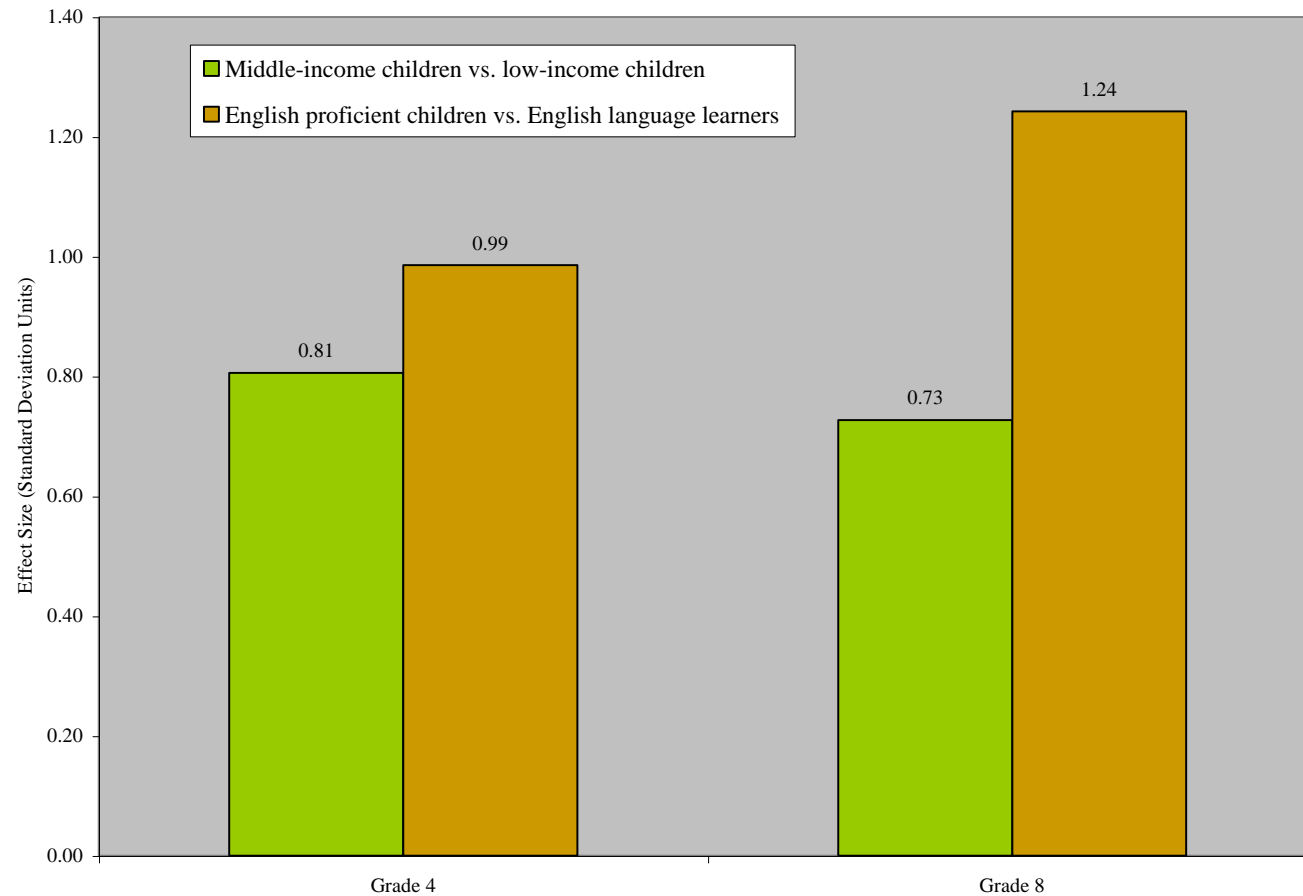
Agenda

- The nature of the problem: <u>Reminding ourselves about struggling readers with a focus on English language learners and low-income children</u>

- The particular challenges of reading comprehension, particularly in content areas

- The crucial role of discussion in promoting academic language

- One approach to building vocabulary and academic language through discussion: *Word Generation*

- Results: target word gains and writing outcomes

- Conclusion

Adolescent literacy and English language learners

- Only 30% of secondary students read proficiently (nationally)

- **89% of Hispanic** and 86% of African American middle and high school students read below grade level (NCES, 2007)

- 57% of **adolescent ELLs** were born in the US (Batalova, Fix, & Murray, 2005)

  - This suggests many English-language learners are not learning the core content in English despite many years in US schools (August, 2006)

- The achievement gap between ELLs and non-ELLs is most striking at the middle and high school level (Education Week, 2009)

- Massachusetts: Since TBE was voted out, the high school dropout rate nearly doubled for students still learning to speak and write in English (Gaston Institute, UMASS, 2009)

Figure 1: Achievement Gap on the 2007 NAEP Grade 4 and Grade 8 Reading by Family Income and English Language Learner Status

- A significant part of the achievement gap is a vocabulary gap (true for native English speakers and ELLs)
- English language development is a misnomer for many ELLs; little emphasis on promoting or building ORAL language proficiency
- Focus on decoding

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Hypothesis: "adolescent literacy crisis"

- Something happens in the middle schools (engagement, motivation?)

- Greater language demands of secondary texts, particularly vocabulary that occurs across content area texts

- Unfamiliarity with specific academic vocabulary—the words necessary to learn and talk about academic subjects (*analyze, refer, claim, develop, interpret*)

- We tend to focus on the unusual (*hollyhock, sarcophagus)* or on discipline-specific vocabulary/concepts (*antebellum, slope, isotopes)*

- L2 learners navigate all of the above with the added burden of acquiring English and mastering grade-level content simultaneously

Poor comprehension outcomes in the middle school

- Poor comprehension outcomes in middle school are not necessarily a product of poor word reading, but a lack of vocabulary and academic language

- Lack of knowledge of the middle and lower frequency "academic" words encountered in middle and secondary school texts impedes comprehension of those texts

By using decoding and other skills, students can fluently "read" largely incomprehensible texts and answer "comprehension" questions

- ❑ Second language learners can seem proficient in comprehension if questions or activities simply require them to "pluck" a satisfactory response from the text.

- ❑ Background knowledge, vocabulary, and real comprehension must be checked by more meaningful interactions with texts

- ❑ Fast-paced, low-level question answer routines are the norm in most classrooms serving ELLs (Zhang, Anderson, & Nguyen-Jahiel, 2009)

How do we build oral language proficiency/academic language in English for ELLs?

- ❑ We need <u>classroom discussion</u> that provides ELLs with opportunities for developing language skills that gives them greater access to texts, to ideas, to higher- level thinking, to participation in national and international conversations

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Academic Discourse

- Gamoran & Nystrand study, (1991) showed that the amount of time engaged in discussion was the strongest predictor of achievement scores in 16 middle and high schools

- Applebee, Langer, Nystrand & Gamoran,(2003) Replication study over a period of two years, looking at the impact of discussion-based approaches in 20 middle and high schools researchers found growth in abstraction and elaboration in writing (specifically about literature)

Evidence concerning the role of discussion

Classroom discussion is rare and brief

(Applebee, Langer, Nystrand & Gamoran, 2003)

	Low track classes	Middle track classes	High track classes	Mixed classes
Minutes of discussion/lesson	0.70	1.44	3.30	1.42

And it always has been (Gamoran & Nystrand, 1991)

Discussion-based reading programs/pedagogical approaches

- Book Clubs, Literature Circles, Instructional Conversations, and Collaborative Reasoning have been used successfully to develop ELLs reading comprehension and develop their higher order thinking skills

- These programs/approaches provide valuable opportunities for language development and improved reading comprehension

Language rich discussions/CR with ELLs (Zhang, Anderson, & Ngyuyen-Jahiel, 2009)

- Found that over a four-week period (8 discussions), ELL fifth-graders who participated in the peer-led, open format discussion approach(CR) resulted in improvements on listening and reading comprehension measures as well as in the production of more coherent narratives with more diverse vocabulary and text evidence
- Doubled the ELL students' rate of talk

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- ☐ <u>One approach to building vocabulary and academic language through discussion: *Word Generation*</u>

- ☐ Results: target word gains and writing outcomes

- ☐ Conclusion

Why did we develop a discussion-based cross-content academic language program?

- SERP (Strategic Education Research Partnership) was asked to focus on improving reading comprehension at the middle school level by its first partner (Boston)

- Middle school teachers and administrators identified students' limited vocabulary knowledge as an obstacle to reading comprehension as did assessment data

- This led to the design and development of a cross-subject vocabulary program with **discussion** as a primary focus for developing academic language for the middle school

Challenges to Vocabulary Instruction

Our initial classroom observations in multiple middle schools revealed that:

- Vocabulary is not usually taught in middle school
- If it is, usually falls on the ELA teacher
- If it's done, usually word lists and memorization
- In other content areas, vocabulary is content-specific
- Texts fail to engage adolescents
- Discussion is rare; IRE prevails

How we responded: 3 levels

- Designed a program to:
    - Build the vocabulary of middle school <u>students</u> through repeated exposure to high frequency academic words in various contexts across all content areas;
    - Promote regular use of effective instructional strategies, especially the importance of **discussion** across all content area <u>teachers</u>;
    - Facilitate faculty collaboration on a <u>school-wide</u> effort (whole school adoption is highly recommended).

Research base: Principles of Effective Vocabulary Instruction

- ❑ Students need multiple, intentional exposures to language/words for internalization
- ❑ Students need to hear and use high leverage words in varied contexts
- ❑ Students need opportunities to use the words in speaking and writing (organized discussion)
- ❑ Targeted direct teaching can be effective
- ❑ Imparting word learning strategies has long term effects

Word Generation: Materials

- 3 series (3 years of materials).
- 24 week-long units each focused on a set of 5 target words selected from the Academic Word List (AWL)
- Cross content activities: 15 minutes a day/5 days a week)
- Texts written at 6th grade level
- **Passages written to engage adolescents in high-level discussions on nationally-relevant topics as well as on topics that are of great interest to this age group**

•Should there be federal funding for stem cell research?

•Should athletes be paid multi-million dollar salaries?

•Should amnesty be given to undocumented immigrants?

•Affirmative action and college admissions

•Should you be able to rent a pet?

•Should there be curfews for teenagers?

•Junk food: Should it be sold in schools?

Word Generation: Weekly Schedule

Monday
Launch passage introduces words

Tuesday-Thursday
Math-Science-Social Studies

Friday
Writing with focus words

ELA: Launch

Introduction to weekly passage, containing academic vocabulary, built around a question **that can support discussion and debate**, (comprehension questions, student friendly definitions included) SERP

SHOULD THE GOVERNMENT FUND STEM CELL RESEARCH?

Word Generation - Unit 2.07

Focus Words

embryo | paralyzed | theory | investigate | obtain

Weekly Passage

In summer 2003, toddler Kai Harriott of Boston was sitting on her porch, singing with her sister. A gang member shot into the air to scare Kai's neighbors. Kai was hit by a bullet. After being shot, Kai was <u>paralyzed</u>. She could not move from the waist down. Because of her injury, Kai must use a wheelchair. But scientists have an idea that might help. They have a <u>theory</u> that stem cells can someday help people like Kai.

Stem cells are found in different parts of the human body, including in our blood. Stem cells are also found in fertilized human eggs, called <u>embryos</u>. Stem cells from embryos can develop into cells that do many different jobs in the human body. With more research, we may be able to grow replacement parts for humans from stem cells.

If doctors can grow spinal cord cells, people like Kai might walk again. New brain cells could help people who have had strokes or Alzheimer's disease. Scientists might also learn to grow the cells that make insulin. This could help people with diabetes. But to <u>obtain</u> some stem cells, scientists must destroy a human embryo.

Many people think that human life begins when an egg is fertilized. They think destroying a human embryo is like murder. They say scientists should only work with stem cells from adults. But most scientists find that stem cells taken from adults won't grow into the many different kinds of human cells the way that stem cells from embryos do. Stem cells from embryos may be our only hope of curing some diseases.

<u>Investigating</u> stem cells will take years and cost millions. Should the government pay for stem cell research?

Word Chart

Unit 2.07

Should the government fund stem cell research?
Focus Word Chart

Word	Meaning	Forms	Examples of Use	Notes
embryo	(n.) - new organism in a mother's womb			
paralyzed	(adj.) - unable to move			
theory	(n.) - an explanation for a set of related facts			
investigate	(v.) - trying to learn about			
obtain	(v.) - to get			

Math

a) Students can work in pairs
b) Whole class discussion
c) Open-response (show/explain how you got your answer)

MCAS-type mathematics problems using some of the target words

Unit 2.07
Should the government fund stem cell research?
Problem of the Week

President George W. Bush restricted government funding on stem cell research. On August 9, 2001, he said that scientists could not **obtain** federal money for research on embryonic stem cell lines created after that date. This **paralyzed** certain areas of research. Scientists put some scientific **investigations** on hold.

President Bush believed he had a moral duty to stop new **embryos** from being destroyed. Each embryo, he pointed out, is a potential human being. His **theory** was that using embryos for research cheapens human life.

President Obama has a different moral theory. He says human beings have a moral duty to help people who are suffering. Therefore, they should use science to fight disease. In 2009, President Obama lifted President Bush's restrictions.

Option 1: Each embryo needed to start a stem cell line is made up of about 100 cells. Its mass is about one ten-millionth of a gram. Which of the following shows one ten-millionth?

    A) .0001
    B) .00001
    C) .000001
    D) .0000001

Option 2: Each embryo needed to start a stem cell line is made up of about 100 cells. Each person is made up of about 100 trillion cells. Write both numbers in scientific notation. How many orders of magnitude separate the two numbers?

Discussion Question: In 2009, the FDA approved the first clinical trial using **embryonic** stem cells. A company called Geron Corp planned to inject embryonic stem cells into 8–10 people whose legs were **paralyzed** by a spinal cord injury. The Geron scientists had a **theory** that these cells could help repair damaged nerves. **Obtaining** subjects for the trial would take time, because the scientists wanted to inject the cells within a few days of the injury. They said the trial was primarily an **investigation** into whether injecting stem cells would be safe. But they also hoped to see whether the stem cells would help patients recover some movement in their legs.

Pretend that you are against stem cell research. What would you say to these researchers to convince them to give up this project?

Science

Thinking experiments to promote discussion and scientific reasoning

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Unit 2.07

Should the government fund stem cell research?
Science Activity

This activity is designed to help you practice thinking like a scientist and to use this week's focus words. Sometimes the data are based on real research, but they should never be considered true or factual.

Professor Seemy's class is talking about stem cell research.

"I saw a woman on TV who was **paralyzed** in a car accident," says Gabriel. "She said stem cell research could help her walk again."

"I saw a guy on TV who opposes stem cell research," says Toni. "He said that scientists kill babies to **obtain** stem cells."

"That's wrong," says Gabriel. "Scientists get stem cells from **embryos** that grow in a lab. Embryos aren't babies. They're tiny clumps of cells."

"People have strong opinions about stem cell research," says Professor Seemy. "But they may not understand stem cell science. I have a **theory**. I bet most people don't even know what stem cells are. Let's **investigate**!"
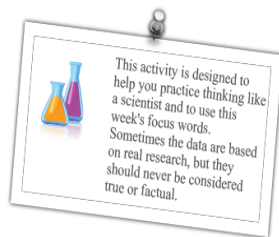
Question:
   How many people can define "stem cell"?

Hypothesis:
   Most people will not know these basic facts about stem cells:
      a. A stem cell is a cell that can become a more specialized cell.
      b. Stem cells become skin, blood, nerve, and muscle cells.
      c. All cells in a person's body come from (or stem from) stem cells.

Materials:
   ▸ 100 adults

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Procedure:
   1. Show each adult the 3 statements about stem cells.
   2. Ask whether the statements are true or false.
   3. Calculate the percentage of right and wrong answers for each question.

Data:

Statement	Right	Wrong
A	60%	40%
B	25%	75%
C	18%	82%

Conclusion:

   Is the hypothesis supported or not by the data?

   What evidence supports your conclusion?

   How would you make this a better experiment?

Debate/ Discussion

Developing *positions on the issue* set out in the passage, to help the class frame the debate

Unit 2.07

Should the government fund stem cell research?
Debating the Issue

1. Get ready...
Pick one of these positions (or create your own).

A Scientists should focus on finding cures using adult stems cells instead of stems cells from embryos. There are valid ethical concerns about using embryonic stem cells.

B Destroying an embryo to get the stem cells is like murder. This should be a crime.

C The government should pay for embryonic stem cell research. This could be our only hope for treatment of many injuries and diseases that cause suffering and death.

D Scientists should be allowed to do research on embryonic stem cells, but the government should not pay for it because many taxpayers oppose it.

E _____
_____

GO!

Be a strong participant by using phrases like these.

In my experience . . .

that's similar to what I think too...

What makes you think that?

When I re-read the text, it reminded me...

2. Get set...
Be ready to provide evidence to back up your position during your class discussion or debate. Jot down a few quick notes:

_____
_____
_____

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Writing/Taking a Stand

Give evidence to support your position.

Writing Prompt

Should the government fund stem cell research?

Support your position with clear reasons and specific examples. Try to use relevant words from the Word Generation list in your response.

Focus Words

embryo | paralyzed | theory | investigate | obtain

_____

_____

_____

_____

_____

A tool to help you think about your own writing!

Remember you can use focus words from any of the WG Units.

Check off what you accomplished:

Good Start

☐ Stated my own position
☐ Included 1 focus word

Pretty Good

☐ Stated my own position clearly
☐ Included 1-2 arguments
☐ Included 1-2 focus words

Exemplary

☐ Stated my own position clearly
☐ Included 1-2 arguments
☐ Included 1 counterargument
☐ Used 2-5 focus words

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Multiple Choice Test Results

Grade	n	Mean percent Correct 1st 12 week words	
		Pre	Post
W			
Six	29	65.09	77.82
Seven	46	68.20	82.75
Eight	64	74.67	85.02
R			
Six	104	68.28	77.02
Seven	109	72.24	79.04
Eight	120	75.03	83.96

SERP

Multiple Choice Test Results

	Grade	n	Mean percent Correct 1st 12 week words	
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	Eight	120	**75.03**	83.96

SERP

Year 2 results

	Pretest		Post test		
	Mean	SD	Mean	SD	Gain
□ Comparison (n= 294) (3)	21.02	6.20	22.97	7.15	1.95
□ Treatment (n=632) (5)	18.53	6.17	22.93	7.33	4.4

40 items…represents 4.5 word gain.. Taught 120.. Infer they gained approximately 14 target words through participation in all the weekly activities; students who gained more words also did better on the MCAS

Descriptive statistics also suggest that students who spoke a language other than English at home improved more than monolingual English students on measures of target word knowledge   (Snow, Lawrence, & White, 2009)

| | Students who spoke a language other than English at home | | | | Students show spoke English at home | | | |
| | Comparison School (n = 151) | | WG School (n = 287) | | Comparison School (n = 168) | | WG School (n = 410) | |
	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest	Pretest	Posttest
Mean	21.10	22.38	18.56	22.26	21.32	23.03	18.70	22.32
SD	6.40	6.84	6.46	7.06	6.81	7.36	6.49	7.12
Gains	1.28		3.70		1.71		3.62	

Discussion/Debate and Writing Outcomes (WG)

The more English language learners hear academic language and use them in debates and classroom discussion, the more these all-purpose, fly-under-the-radar, high leverage words, appear in their writing.

Do students use (and re-use) the target WG Words in their Writing?

- On average, 2 of the 5 target words were used in the weekly essays

- On average, 10 past target words were used across the intervention

Top 4 Learned Words

- ☐ impact (used 50 times after it was introduced)

- ☐ analyze (used 40 times after it was introduced)

- ☐ conflicted (used 33 times after it was introduced)

- ☐ benefit (used 21 times after it was introduced)

Writing Quality Results

- Interestingly… most of the growth occurred during the last 10 weeks of the intervention:
  - First 10 weeks = .03 (or .58 points)
  - Second 10 weeks = .04* (or .81 points)
  - Practice effect only (no instructional guidance)

Yadarys: Transnational Dominican Student, ELL, LD, 6th grader "Who is responsible for protecting teens from on-line predators?"

- My perspective about the controversy of the debate is that the *govermint* is the person responsible for protecting teens from online predators. Because the *govermint* shoud have a *meding* with people how will like to make a *wedsite* and the *govermint* shoud make the person how would like to make a *wed* site *sine* a *contraket* with thing that are *iniporeit* to have on the *wed* site and rules *to*. I can also justify my perspective by saying that it is the *govermint folt* if there is a kid in *eney* part of the world lays there see one a *wed site* that is *iniporeit* or *dangice*. The kids can creat *koce* and tension between them and *there parision*. The kids will tell and *pace* on to more kids to see the *wed* site and they will become bad kids and they will not be *focest* on school and the things they do in school like research data and facts or cite *there* perspectives about things they will *mesup* there *fucher*. There life will never be ongoing so that is my biases about who is responsible for protecting teens from oline predators.

Corrected and coded for target word use

My <u>perspective</u> about the <u>controversy</u> of the <u>debate</u> is that the government is the person responsible for protecting teens from online predators. Because the government should have a meeting with people how (who) will like to make a web <u>site</u> and the government should make the person how (who) would like to make a web site sign a <u>contract</u> with thing(s) that are important to have on the web site and rules too. I can also <u>justify</u> my <u>perspective</u> by saying that it is the government('s) fault if there is a kid in any part of the world lays there see one a web site that is <u>inappropriate</u> or dangerous. The kids can create chaos and <u>tension</u> between them and their parents. The kids will tell and pass on to more kids to see the web site and they will become bad kids and they will not be <u>focused</u> on school and the things they do in school like <u>research,</u> <u>data</u> and facts or <u>cite</u> their <u>perspectives</u> about things they will mess up there future. Their life will never be <u>ongoing</u> so that is my <u>bias</u> about who is responsible for protecting teens from on-line predators.

Word Count: 194

Target Words Used from Previous Weeks

biases, cite, contract, controversy, data, debate, focus, inappropriate, justify, on-going, perspective, research, cite, tension

Week 1: controversy, perspective, biases, debate
Week 2: research, cite, data
Week 3: on-going
Week 4: tension
Week 6: inappropriate
Week 13: focus
Week 15: 0   (pose, contact, prime, minimum, unmonitored)

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Challenges discovered

- Launching/managing discussion is not part of teacher repertoires
- This is not a skill prioritized on state standards or through certification procedures
- Learning to do it is not easy (though it is possible)

Serendipitous discoveries from WG classroom discussion and debates…

- ❑ Teachers are impressed by the sophistication of students' ideas

- ❑ Students value the opportunities for discussion, especially of more student-centered topics although students were passionately engaged in debates around genetically modified foods and doctor-assisted suicide and federal funding for stem cell research

- ❑ ELLs write impassioned essays on units that spoke to the immigrant experience, second language learning ,amnesty was the top-scoring word on the target word measure

- ❑ Struggling readers have a new venue from which to present themselves newly as academic, political, and social actors

To conclude..

- Engaging in WG <u>discussion-based weekly activities</u> across content areas can improve word learning for L2 learners on target word measures and their use in persuasive essays

- Embedding debate and discussion-based classroom activities as well as systematic vocabulary instruction school-wide has the greatest potential to accelerate the reading achievement of low-income children and especially English language learners

- Update: IES grant to modify WG for grades 4-8; more discussion

- Word Generation has been translated into Spanish

- Word Generation is free and downloadable: wordgeneration.org

white.claire@gmail.com

Questions?

Raise your hand or enter your question in the chat box
on the left side of your screen.

Thank you for participating.

- This webinar will be archived at the following website: http://www.charterschoolcenter.org/webinars/

- Please share your feedback with us through the evaluation.

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National **Charter School**
Resource Center
at American Institutes for Research

National Charter School Resource Center
1000 Thomas Jefferson Street NW
Washington, DC 20007-3835
Phone: 877-277-2744
Website: www.charterschoolcenter.org
E-Mail: charterschoolcenter@air.org